

BOOK REVIEW

Ecology and Our Endangered Life-Support Systems. Eugene P. Odum. 1989. Sinauer Associates, Inc., Publishers. Sunderland, Massachusetts. 283 p.

America struggles with her ecological concept. The great paradox is that industrialized nations have succeeded by temporarily uncoupling mankind from nature through exploitation of finite, naturally produced fossil fuels that are rapidly being depleted. Yet civilization still depends on the natural environment, not only for energy and materials but also for vital life-support processes such as air and water cycles. As a people we are loath to admit our frailties and despite our ability to send satellites billions of miles from earth, we remain basically earth-bound. Odum illustrates this point in his Epilogue with a description of the difficulties encountered by the Apollo 13 spaceship shuttle flight. Although our plight may not be as urgent as the one faced by those life-threatened astronauts, we nevertheless find our global environment stressed by pollution, poor management, and population pressure.

This book is written not only for students, but serves as a citizen's guide and primer to the principles of ecology as they relate to our life-sustaining systems. It is in part an extensively rewritten and updated version of Odum's popular textbook, *Ecology*. It is not similar to his *Fundamentals of Ecology*, which is much more detailed and scientifically oriented. Odum's new book will be particularly valuable to the increasing number of specialists from a multitude of fields (engineering, economics, law, public health, agriculture, and politics) that are continually drawn into the environmental morass. He correctly emphasizes the necessity of understanding the causes and long-term solutions needed for our environmental problems, rather than the "quick-fix," short-term treatment of symptoms offered by lobbying groups and radical environmentalists.

Eugene Odum not only enjoys his reputation as an elder statesman for ecology, he relishes it! For those who believe, as stated by Robert Louis Stevenson, "That sooner or later we all dine at a banquet of our consequences," then Odum offers one final repast. As a tribute to his lengthy career as a scholar on the highest level, Odum presents a compendium of thoughts regarding environmental ethics, holoeconomics, and prospects for our global future. This book should serve as a mainstay for introductory college-level ecology courses, as well as supplementary reading for more advanced courses. If graduate students wish to review ecological concepts and ideas before general examinations, this is a book that will quickly do the job.

It is hard to imagine finding a more useful text; important terms are placed in boldface type, each chapter concludes with a suggested reading list and cited references, and a logical sequence of topics leads one through a series of non-technical and technical discussions. The author offers his personal views on some of the situations that we are facing today by placing them in boxes throughout the text. The book has been illustrated with line drawings, many of them in the form of easily understood graphic models and black and white photographs. There is a concluding index but no glossary.

Chapters 1 and 2 deal with the life-support environment, energy and land use, point- and nonpoint-source pollution, and biological levels of organization. A short section on ecological modeling could have been improved with several specific references to computer software that would be useful to instructors. Chapters 3-8 are somewhat more technical, and discuss topics such as food chains, energetics, biogeochemical cycles, population ecology, succession and evolution, and major ecosystem types. Biographical sketches of pioneers in ecological thought are included throughout the book and should serve to stimulate students to pursue more in-depth research on authors and topics of interest. More recent reports, such as "Our Common Future" issued by the World Commission on Environment and Development, should be of interest to everyone since it concludes that the current trends of economic development and accompanying environmental degradation are unsustainable. A recurrent theme in this book has been the contention that the overly narrow economic theories and policies that dominate world politics are major obstacles to achieving a reasonable balance between our need for nonmarket as well as market goods and services.

Ecologists have been criticized for their propensity to waste precious time in gathering small pieces of data, combined with a failure to piece together the components of the "big picture." Odum has challenged us to review our misplaced priorities; for example, the welfare of the individual as opposed to the good for society. Discussion sessions which result from the textbook readings will no doubt conclude that we live a fragile existence. The bugler has hopefully not signaled our last warning.

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